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10/585,011	06/29/2006	Will A. Egner	CER-001	4100
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/585,011

Applicant(s)

EGNER ET AL.

Examiner

Ed Baird

Art Unit

3695

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 May 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 22-31, 43, 44 and 53-58 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 22-31, 43, 44 and 53-58 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 August 2007 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on **20 April 2010** has been entered.

Status of Claims

2. This communication is in response to Applicant's communications filed on **20 April 2010** and **11 May 2010**. Claims 1, 10, 22, 31 and 43 were amended, claims 16-21, 37-42 and 45-52 were canceled, and claims 53-58 were added based on Applicant's communications filed on **20 April 2010**. Claims 1, 9, 10, 22, 30, 31, 43, 53, 54, 57 and 58 were amended in the Applicant's communications filed on **11 May 2010**. Claims 11-15 and 32-36 had been canceled prior to last office action. Hence, claims **1-10, 22-31, 43-44 and 53-58** are pending in this application.

Response to Arguments

3. Applicant's remarks/ arguments filed **20 April 2010** and **11 May 2010** regarding the 35 U.S.C. § 103(a) rejections have been fully considered but they are not persuasive.

4. Applicant argues **Adduci** does not teach *analysis for the provisioning of a communications service does not distinguish between sectors within a geographic region, and therefore is not indicative of claim 1's application to "one or more of the sectors"* [Remarks 20 April 2010, hereafter referred to as Remarks 1, page 14, 1st full paragraph, *inter alia*]. However, Examiner respectfully disagrees.

Adduci clearly discloses:

"In one example, the financial analyzer 42 may provide a display or graphical representation that represents volume of estimated traffic on the enhanced wireless system by *market segment*. In another example, the financial analyzer 42 may provide a financial analysis that includes a cost segment and a revenue segment. The cost segment includes investment (e.g., start-up costs) and maintenance costs for supporting the enhanced wireless services in the geographic region for the specified application or applications. The cost segment preferably includes sale costs, which may be subdivided into marketing costs for obtaining customers for the new wireless communications service and operational costs for maintaining existing customers." [column 5 lines 38-50]

Examiner interprets *market segment* as inclusive of Applicant's *sectors within a geographic region* in as much as it involves "enhanced wireless services in the *geographic region*".

Examiner notes that the statement of "determining an investment return per sector for one or more of the sectors" (emphasis added) as recited in claim 1 is merely a statement of intended use as discussed in Final Office action - page 5 - mailed 28 January 2010.

5. Applicant argues Examiner has not provided any specific basis for making the statement that "determining an investment return per sector-for one or more of the sectors" is a statement intended use [Remarks 1, page 14, 4th paragraph]. Examiner clarifies in that the "determining an investment return per sector for one or more of the sectors" is functionally equivalent to "determining an investment return" for anything. In addition, the fact that it is for one or more of the sectors (emphasis added) is merely repeating of steps, and does not add patentable weight. As per *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960), the court held that mere duplication of parts has no patentable significance unless a new and unexpected result is produced.

6. Applicant makes similar arguments [Remarks 11 May 2010, hereafter referred to as Remarks 2, page 14, 3rd paragraph, *inter alia*]. However, Examiner disagrees as discussed *supra*.
7. Examiner has updated rejections to include particular elements of wireless networks as claimed in the amended claims.

Applicant Admitted Prior Art

8. Applicant has failed to traverse the Examiner's **Official Notice** given in the Office Action mailed **27 August 2009** regarding the well known nature of dependent claims 2, 3, 23 and 24. Hence, the limitations:

- *marketing costs and maintaining existing customers* are indicative of **subscriber contracts**, and
 - subscriber profit proxy is based on expected duration of a subscriber contact.
- is now taken to be **applicant's admitted prior art (AAPA)** as per MPEP 2104 C.

Drawings

9. Figures 1 and 2 look identical except the numbers describing the sectors and antennas. However, Figure 1 represents a wireless network and Figure 2 represents an embodiment of the present invention. Applicant should distinguish between the two drawings or remove Figure 1 in as much as it is not described in the specification.

Specification

10. Replacement Abstract filed 28 July 2010 has been entered.

11. Figures 1 and 2 look identical except the numbers describing the sectors and antennas. However, Figure 1 represents a wireless network and Figure 2 represents an embodiment of the present invention. Figure 1 is not discussed in the specification except being listed. Applicant should show where in the specification Figure 1 is discussed or consider removing it.

Claim Objections

12. **Claim 30** is objected to because the term R_k is not defined. Examiner believes the first part of claim should read: "The computer program product of claim 29, wherein the computer program code for determining the investment return per sector (R_k) includes computer program code for performing the equation:". Appropriate correction is required.

13. **Claim 43** is objected to because of the following informalities: the term: serving ***the*** one of the sectors" should be written: "serving one of the sectors". Appropriate correction is required.

Claim Rejections - 35 USC § 112

14. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

15. Claims 1-10, 43, 44, 53-54 and 57 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

16. Regarding **claim 1**, the preamble states: "A method of transforming a wireless network, the method comprising:". It is not clear to the examiner how a wireless method is transformed. Perhaps the Applicant meant: "A method of determining capital investment in wireless network sectors comprising:". Appropriate correction is required.

17. Also regarding **claim 1**, the limitation:

- selecting one of the sectors in the wireless network for capital investment, the selecting based at least in part on the investment return per sector.

is indefinite in that it is not clear whether the computer system is making the selection or an operator is making a selection.

For the purposes of examination, the Examiner will interpret the limitation to the best of his ability. Appropriate correction is required.

18. Also regarding **claim 1**, the limitations do not positively recite method steps and are hence indefinite. For example, in the limitation:

- using a computer system for determining a subscriber profit proxy for a plurality of subscribers in the wireless network, the wireless network comprising multiple cell sites, each cell site having- a coverage area divided into sectors, each sector having at least one cell site antenna serving that sector, the wireless network thereby comprising multiple sectors;

"determining a subscriber profit proxy" is not clearly performed. Examiner suggests changing this limitation to:

- determining, using a computer system, a subscriber profit proxy for a plurality of subscribers in the wireless network, the wireless network comprising multiple cell sites, each cell site having- a coverage area divided into sectors, each sector having- at least one cell site antenna serving- that sector, the wireless network thereby comprising- multiple sectors;

Similar limitations should be changed in a similar manner. For the purposes of examination, the limitations will be interpreted as discussed. Appropriate correction is required.

19. **Claims 2-10, 43, 44 and 53-54** are rejected under 35 U.S.C. 112, second paragraph, being dependent on a rejected claim.

20. Regarding **claims 53 and 57**, the exemplary limitation in claim 53:

- wherein the selecting one of the wireless network sectors for capital investment further comprises selecting more than one of the wireless network sectors for capital investment.

does not make sense. Examiner believes the Applicant means:

- further comprising selecting additional wireless network sectors for capital investment.

For the purposes of examination, the limitations of both claims will be interpreted accordingly. Appropriate correction is required.

Claim Rejections - 35 USC § 103

21. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

22. Claims 1, 4, 22, 25 and 53, 54, 57 and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Adduci et al** (US Patent No. 7,343,334) in view of **Cossins et al** (US Pub. No. 2003/0083073) in further view of **Elliott** (US Patent No. 7,158,790).

23. Regarding **claim 1 and 22**, **Adduci** teaches:

- using a computer system for determining a subscriber profit proxy for a plurality of subscribers in the wireless network [see at least column 15 lines 6-8, and column 16

lines 9-28] – Examiner interprets *net present value (NPR)* and *return on investment* as indicative of Applicant's *subscriber profit proxy*,

- using the computer system for determining a number of minutes of use over a period of time for one or more of the subscribers [column 8 line 52 – column 9 line 3];
- using the computer system for determining an investment return per sector for the one or more sectors in the wireless network, wherein the investment return is based upon the subscriber profit proxy for the plurality of subscribers, the number of minutes of use over the period of time for the one or more of the subscribers [see at least column 16 lines 9 – 53] – Examiner interprets *return on investment (ROI)* as analogous to Applicant's investment return per sector. Examiner notes applying *financial analysis* to different *geographic regions* as indicative of Applicant's application to *one or more of the sectors*.

and the service quality metric for the one or more sectors in the wireless network [discussed below]; and

- selecting one of the sectors in the wireless network for capital investment, the selecting based at least in part on the investment return per sector [column 16 lines 38-53] – “*procurement of telecommunications infrastructure*”.
- using a computer system to accomplish above limitations [column 4 lines 4-15].
- a computer program product having a computer program product for accomplishing these steps (*claim 22*) [see at least column 2 lines 30-44 and column 5 lines 26- 43].

Adduci discloses equipment including *antennas* used for wireless communications service in a particular geographic region [column 7 lines 4-20]. However, he does not explicitly disclose:

- the wireless network comprising multiple cell sites, each cell site having a coverage area divided into sectors, each sector having at least one cell site antenna serving that sector, the wireless network thereby comprising multiple sectors.

However, **Cossins** teaches a system for managing a cell network comprising geographic elements and network elements [0003]. He further discloses *a cell site having three sectors, one for each of three antennas* [see at least 0144].

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the instant invention to modify **Adduci's** disclosure to include *cell sites with coverage divided into sectors, each sector having a cell site antenna* as taught by **Cossins** because performance elements may be parsed into a third of a circle or concentric ring, and can be generated for each of the three sectors [**Cossins** 0144].

Neither **Adduci** nor **Cossins** explicitly discloses:

- using the computer system for determining a service quality metric for one or more sectors in the wireless network;

However, **Elliott** teaches *a system for improving the service coverage of wireless networks by making measurements of the service coverage of the wireless network* [column 2 lines 30 – 44, column 4 lines 56 – 67, and claim 1]. He further discloses *gathering information indicating quality of service coverage and determining actual service coverage of the wireless network in real-time according to actual demand for service* [see at least column 2 lines 45 – 61]. Examiner interprets *demand for service* as further indicative of Applicant's *number of minutes of usage of the subscribers*.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the instant invention to modify **Adduci's** disclosure to include *quality of service coverage and*

a demand for service as taught by **Elliott** because these features can provide an improvement in the service coverage of wireless networks [**Elliott** column 2 lines 30 – 35].

24. Regarding **claims 4 and 25**, **Adduci** teaches:

- the minutes of use over the period of time is based on call detail records collected during peak usage periods [see at least column 6 lines 42 – 60].

25. Regarding **claim 53 and 57**, the limitation:

- wherein the selecting one of the wireless network sectors for capital investment further comprises selecting more than one of the wireless network sectors for capital investment.

is not further limiting in as much as is merely repeating of steps (i.e. selecting more than one), and does not add patentable weight. As per *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960), as discussed supra.

26. Regarding **claim 54 and 58**, the limitation:

- wherein the one of the wireless network sectors is served by a first base transceiver station (BTS) in the wireless network, and wherein the selecting one of the wireless network sectors for capital investment further comprises selecting all sectors served by the first BTS for capital investment

is not further limiting in as much as is merely repeating of steps (i.e. selecting more than one), and does not add patentable weight. As per *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960), as discussed supra.

27. Claims 2, 3, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Adduci** in view of **Cossins** in further view of **Elliott** and in further view of **AAPA**.

28. Regarding **claim 2 and 23**, **Adduci** teaches:

- revenue collected from the subscriber, an expected number of months under a contract, an acquisition cost, and, a service delivery cost [see at least column 5 lines 38 – 54]

AAPA teaches Applicant's *subscriber contracts* in wireless communication services.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the instant invention to modify **Adduci's** disclosure to include *subscriber contracts* because one skilled in the art at the time of the instant invention would be aware of such contracts in wireless communication services.

29. Regarding **claim 3 and 24**, **Adduci** teaches:

- subscriber profit proxy (SPP) value determined by the equation:

$$SPP_i = V_i * M_i - A_i - S_i$$

wherein

- V_i is the revenue per month for subscriber i [see at least column 5 lines 26 – 43];
- M_i is the expected months for subscriber i [Id.];
- A_i is the acquisition cost for subscriber i [Id.]; and
- S_i is the service delivery cost for subscriber i [Id.].

Examiner interprets *revenue segment* as indicative of Applicant's *revenue per month* and *months* of service. Examiner interprets *investment, start-up costs, and marketing, advertising and promotional costs* as indicative of Applicant's *acquisition cost*. Examiner interprets *maintenance costs for supporting the enhanced wireless services* as indicative of Applicant's **service delivery cost**.

AAPA teaches *expected duration of a subscriber contract*.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the instant invention to modify **Adduci's** disclosure to include *expected duration of a subscriber contract* because such contracts are used to guarantee future revenue.

30. Claims 5-10, and 26-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Adduci** in view of **Cossins** in further view of **Elliott** in further view of **Weller et al** (US Patent No. 7,107,224).

31. Regarding **claims 5, 6, 26 and 27** neither **Adduci**, **Cossins** nor **Elliott** explicitly discloses:

- the service quality metric comprising a dropped call rate for each sector; and
- the dropped call rate determined from call detail records collected from each sector.

However, **Weller** teaches a system and method of value-driven build-to-buy decision analysis which includes a demand component and a supply component [column 1 lines 55 – 65]. She applies her system and method to "self-service buying" of cellular phone service over the internet [see at least column 5 lines 48 - 56]. She discloses using parameters such as area of usage, minutes per month of usage, and the number of calls that get dropped [column 5 line 61 – column 6 line 20]. She further uses these parameters to develop "components of value" for the customer [see at least column 7 lines 3 – 38]. These include the intangible costs (based on the customer's willingness to pay) of having no coverage and experiencing dropped calls. Examiner interprets that *intangible cost related to dropped calls* as analogous to Applicant's **service quality metric**.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the instant invention to modify **Adduci's** disclosure to include *accounting for dropped call rates* as taught by **Weller** because, by accounting for such *quality* issues, a customer can make

meaningful comparisons between the intangible values of “quality” and “coverage” and the tangible value of “cost” [**Weller** column 6 lines 9 – 20].

32. Regarding **claims 7 and 28**, **Weller** teaches the limitations:

- determining a profit per sector;
- determining a dropped-call rate per sector;
- determining an investment needed per sector to reduce dropped calls in each sector;
- determining the investment return per sector based at least in part on the profit per sector, the dropped-call rate per sector.

as discussed in the rejections of claims 5, 6, 26 and 27, above. **Weller** does not explicitly disclose:

- determining the investment needed per sector to reduce dropped calls in each sector.

However, it would have been obvious to one having ordinary skill in the art at the time of the instant invention to modify **Weller's** disclosure to include *determining the investment needed to recover dropped calls* because such intangible costs are determined in order that they may be corrected.

33. Regarding **claims 8 and 29**, **Adduci** teaches determining the profit per sector by summing the subscriber profit proxy value for each subscriber [see at least column 15 lines 5 – 50 and column 16 lines 9 -28]. Examiner interprets revenue analysis which includes *average revenue per user per month by customer segment* as indicative of Applicant's **profit per sector**.

Neither **Adduci** nor **Cossins** explicitly discloses determining a profit based on the ratio of minutes usage in one sector to minutes usage in all sectors. However, **Elliott** discloses *determining actual service coverage of the wireless network in real-time according to actual demand for service* [see at least column 2 lines 45 – 61]. Examiner interprets *demand for service* as indicative of Applicant's **number of minutes of usage of the subscribers**, as

discussed in the rejection of claims 1 and 22. Accordingly, these claims are rejected for the same reasons.

34. **Claims 9 and 30** are substantially similar to claims 7 and 28, respectively, and are thus rejected for the same reasons.

35. Regarding **claims 10 and 31**, **Weller** teaches the limitations:

- the selecting one of the wireless network sectors for capital investment is performed at least in part by prioritizing the sectors based upon the investment return determined for each respective sector [see at least column 10 lines 1 – 7].

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the instant invention to modify **Adduci's** disclosure to include *prioritize investments* as taught by **Weller** because it allows companies to get the best possible returns [**Weller** column 10 lines 1 – 7].

36. Claims 43, 44, 55 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Adduci** in view of **Cossins** in further view of **Elliott** in further view of **Scheinert** (US Patent No. 5,787,344).

37. Regarding **claims 43 and 55**, neither **Adduci**, **Cossins** nor **Elliott** explicitly discloses:

- deploying additional equipment to a base transceiver station (BTS) serving the one of the sectors, based at least in part on the selecting one of the wireless network sectors for capital investment.

However, **Scheinert** teaches an *arrangement and method of arranging base transceiver stations and a method of subsequently compressing an existing continuous radio network* [column 1 lines 5-12]. He further discloses *compressing an already existing radio network* [column 5 lines 46-48].

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the instant invention to modify **Adduci's** disclosure to include *modifying the wireless network by deploying additional equipment to a base transceiver station* as taught by **Scheinert** because by modifying existing base transceiver stations is not as costly as investing in "new sites" [**Scheinert** column 5 lines 46-63].

38. Regarding **claims 44 and 56**, **Adduci** teaches the additional equipment is selected from the group consisting of: a radio tower, an antenna, a radio, a cable, and combinations thereof [see at least column 7 lines 4-20].

Conclusion

The prior art of record and not relied upon is considered pertinent to Applicant's disclosure:

- **Feuerstein**: "Input specific independent sector mapping", (US Patent No. 6,070,090).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ed Baird whose telephone number is (571)270-3330. The examiner can normally be reached on Monday - Thursday 7:30 am - 5:00 pm Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles R. Kyle can be reached on 571-272-6746. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ed Baird/
Examiner, Art Unit 3695

/Narayanswamy Subramanian/
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